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ABSTRACT

Diagnostic classifications of sleep and arousal disorders have been categorized in four major areas: disorders of initiating and maintaining sleep, disorders of excessive sleepiness, disorders of the sleep/wake pattern, and the parasomnias such as sleep walking, talking, and night errors. Another nomenclature classifies them into DIMS (disorders of initiating and maintaining sleep) and DOES (disorders of excessive somnolence). There are, in general, two theories of sleep. According to the restorative theory, wakefulness results in an internal state which is antithetical to continued wakefulness. Sleep results in the modification of that state (is restorative). According to the behavioral theory, sleep is a mode of behavioral adaptation to the environment--a behavioral state of diminished responsibility. Sleep stages identified from the observation of brain waves are divided into two divisions--REM and NonREM. During REM sleep dreams occur, and breathing and heart rate are irregular. NonREM sleep features stable breathing and regular heart beats. Sleep averages range from 16 hours a day for the neonate down to 8 hours for the adolescent. The most common types of problems in children (not always apparent) are as follows: snoring, waking and inability to go back to sleep, falling asleep, insufficient sleep, inability to go to sleep alone and waking too early. There are also psychiatric conditions and those that relate to organic condition. One final type of problem is drugs and alcohol. Sleep problems in children relate to reading. (PRA)

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SLEEP PATTERNS AND ITS RELATIONSHIP TO SCHOOLING AND FAMILY

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SLEEP PATTERNS AND ITS RELATIONSHIP TO SCHOOLING AND FAMILY

Interest in sleep and attempts to comprehend it goes back to Aristotle's times who wrote on sleep and dreams in his De Natura. Sleep or its lack has been attributed to nearly every kind of behavior--an elixir for the disturbed mind and personality, superior performance on the job, important ingredient for success in school. The paucity of sleep is often correlated with schizophrenia, in nervous breakdowns, stress causing lack of focus and functioning, a variety of health problems and serious alertness problems.

More than 100 million dollars are spent on prescription sedatives each year. Any one night millions and millions will struggle with their sleep. The Edison world of 24 hours of potential light has ripped away sleep's cocoon of darkness and cut sleep loose to float in a world of shiftwork and continuous entertainment. Airplanes toss sleep across time zones. Sleep, stubbornly defending its existence, needs all the help it can get.

W. B. Webb states - research has been and is building a solid foundation of facts. The neurophysiological mapping approaches completion and the assault on the biochemical secrets continue apace. Disorders of sleep - disturbances of sleep's fundamental mechanisms, such as seen in narcolepsy -- are now viewed more clearly and more certainly. New relations between sleep and other life-systems have become more apparent, as seen in apneas -- respiratory disturbances in sleep. Sleep's place in time and its

relations to its surroundings are being described. The deviations and variations are better known. The search for the magical control by drugs is intensive. The topography, landscape and laws of the dark kingdom become more apparent.

Diagnostic Classification

Dement and Carskadon suggest that in the 10 to 12 year old child the most consistent pattern of alertness exists throughout the day. They did not, according to the research, feel sleepy at all during the day. On the other hand, college students the investigations report spend eight hours in bed--a normal amount of sleep--but felt extremely sleepy in the daytime. Most adults sleep 7 to 8 hours a night. Diagnostic classifications of sleep and arousal disorders have been categorized in four major areas: disorders of initiating and maintaining sleep, disorders of excessive sleepiness, disorders of the sleep/wake pattern and the parasomnias such as sleep walking, talking and night errors. Disorders of sleeping children may be similar though they have been studied as primary disorders and disorders secondary to other emotional and medical conditions.

In the past decade a new nomenclature of diagnosis of sleep problems has emerged. It is organized into two divisions called for short, DIMS and DOES. DIMS relate to disorders of initiating and maintaining sleep and DOES to the disorders of excessive somnolence, these are typically psychophysiologically associated with psychiatric disorders, drugs and alcohol, narcolepsy and other syndromes.

Theories of Sleep

In general, the theories of sleep can be divided into two categories, restorative theories and behavioral theories. Webb. (1979) suggest five theories, the restorative, protective, energy conservation, ethological and instinctive. Andrew Mayes (1983) believes these can be subsumed under the former two division.

The restorative theory can be generally characterized as follows-- wakefulness (and its associated activities) results in (causes) an internal state which is antithetical to continued wakefulness; sleep results in (causes) the modification of that state (is restorative). Aristotle said excesses use of sense perception will cause it to lose its power, sleep follows as a necessity for the sake of conversation.

The behavioral theory describe the purpose of sleep as a mode of behavioral adaptation to the environment. Sleep is a behavioral state of diminished responsibility. According to Mayes, "the amount, period lengths and placement of sleep are species specific endogenously determined tendencies. The purpose of these episodes is to adapt effectively the organism for survival in its particular ecological niche." The Rem and NonRem phases of sleep have been associated with animal survival needs. The greater the danger the greater the amount of sleep. The teleological nature of sleep according to many investigators will wait time, technology, diligence and perhaps imagination.

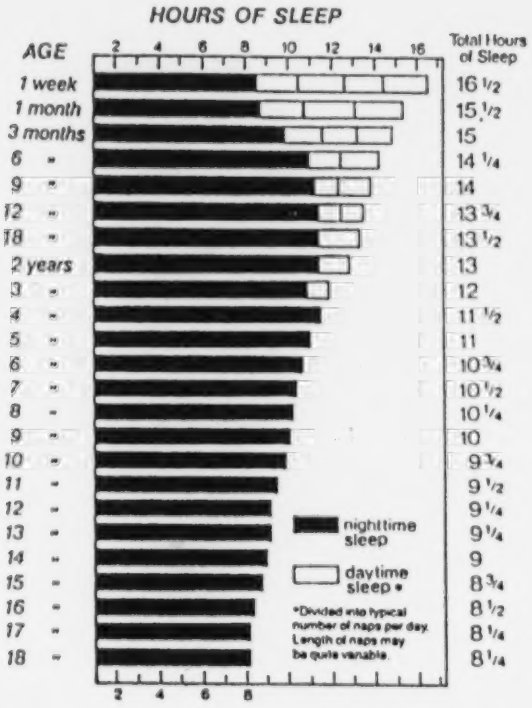
Sleep stages identified in 1953 from the observations of brain waves are divided into two divisions-REM and NonRem. In the NonREM

there are four stages the beginning starts with being awake with eyes closed is evidenced by alpha rhythm following with the drowsiness stage (STAGE 1) the rhythm goes slower, waves are present but there are no spindles or K-complexes. In state 2 (light sleep) K-complex waves appear these are the sleep spindles with stage 3 you fall more deeply asleep then in stage 4 large, slow delta waves appear indicating deep sleep. At the completion of this stage REM begins-- this is the dreaming stage (some investigators believe the person views with their eyes at least in part the action of their dreams). During the NonRem stage breathing becomes very stable and the heart beats regular and sweating may be profuse. In the REM stage breathing and the pulse rate irregular. Reflexes, kidneys function and hormones release changes. Some experts think REM processes daytime emotional experiences and transfers recent memories to long-term storage in the male, penile erection occurs and in females, clitoral engorgement with rising blood flows to the vagina.

Normal Sleep

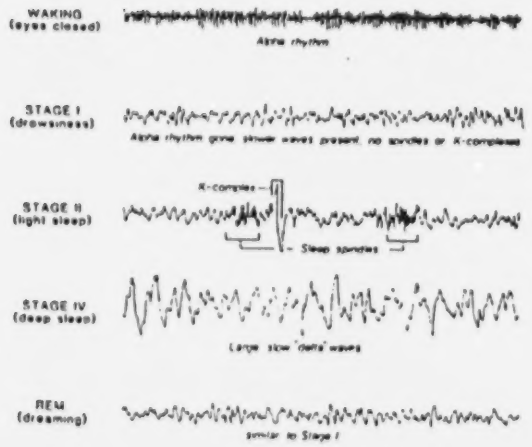
Sleep averages range from sixteen hours a day for the neonate down to eight hours a day for the adolescence. Who is left to their ultimate desire would sleep nine hours. Babies should sleep through the night at six months. In early infancy sleep at night

is accompanied by four naps of approximately two hours each. The following provides a look at sleep for the normal child or youth up till eighteen. These are typical sleep requirements:


HOURS OF SLEEP
AGE
2 4 6 8 10 12 14 16
Total Hours of Sleep
1 week 16 1/2
1 month 15 1/2
3 months 15
6 " 14 1/4
9 " 14
12 " 13 3/4
18 " 13 1/2
2 years 13
3 " 12
4 " 11 1/2
5 " 11
6 " 10 3/4
7 " 10 1/2
8 " 10 1/4
9 " 10
10 " 9 3/4
11 " 9 1/2
12 " 9 1/4
13 " 9 1/4
14 " 9
15 " 8 3/4
16 " 8 1/2
17 " 8 1/4
18 " 8 1/4
nighttime sleep
daytime sleep *
*Divided into typical number of naps per day. Length of naps may be quite variable.
2 4 6 8

Typical Sleep Requirements in Childhood

Brain Wave Patterns in Waking and in Sleep



Sleep Problems of Children and Youth

More changes in sleep/wake patterns and associated physiological functions occur according to Guilleminault (1987) during the first fifteen years of life than the following four decades. Unfortunately information on sleep disorders in children has not been collected or presented systemically. The new nomenclature on diagnostic classifications has been a start of assessment of pathological conditions, this is germative. The most common types of problems in children are as follows: snoring, waking and inability to go back to sleep, falling asleep, insufficient sleep, inability to go to sleep alone and waking too early--these are not always readily apparent. Problems such as sleep terrors sleepwalking, bedwetting and sickness are obvious. Williams et al (1988) suggest that the principal problems noted in the laboratory are insomnia, sleep apnea and related syndromes, nocturnal myoclonus and Narcolepsy. Other categories relate to sleep-wake cycle disorder. Then there are Psychiatric conditions and those that relate to organic condition. One final type of problem is drugs and alcohol. We're dealing here with sleep and adjustment in children and to relation of sleep problems to reading.

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